Plasma talin is a new diagnostic and monitoring marker for rheumatoid arthritis

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ABSTRACT

Background/Purpose: Anti-CCP antibody (ACPA) has been reported to be a useful and highly specificity marker for the diagnosis of rheumatoid arthritis (RA). However, more sensitive diagnostic biomarker might be expected because the sensitivity of ACPA in early RA has been shown to be lower than expected. Talin is a protein that completes the link between integrins and the actin cytoskeleton, and plays an important role in the establishment of focal adhesions. In this paper, we focused on plasma talin as a diagnostic marker for RA.

METHODS

1) Patients and controls
   i) RA patients (n=50): fulfilled 2010 ACR/EULAR Criteria
      Age: 60.9 ± 14.4 y/o
     Disease duration: 35.0 ± 56.4 months
     Early onset (< 6 mos): 44.0% (22/50)
     DAS28: 5.23 ± 1.11
     No treatment: 78.0% (39/50)
   ii) Controls
      a) Normal healthy controls (n=30)
      b) Osteoarthritis (OA) (n=30)
     c) Systemic lupus erythematosus (SLE) (n=20)

2) Quantification of plasma talin
   <sandwich ELISA>

RESULTS

Fig.1 Plasma talin is up-regulated in RA patients.

Table 1. Sensitivity and specificity of plasma talin for the diagnosis of RA

<table>
<thead>
<tr>
<th></th>
<th>Sensitivity(%)</th>
<th>Specificity(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No treatment</td>
<td>90.00</td>
<td>90.00</td>
</tr>
<tr>
<td>Early onset</td>
<td>88.00</td>
<td>90.00</td>
</tr>
<tr>
<td>RA patients</td>
<td>78.00</td>
<td>90.00</td>
</tr>
<tr>
<td>OA patients</td>
<td>76.00</td>
<td>90.00</td>
</tr>
<tr>
<td>SLE patients</td>
<td>74.00</td>
<td>90.00</td>
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</tbody>
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Conclusion: Our findings suggest clinical usefulness of plasma talin as a new diagnostic and monitoring biomarker for RA.